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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/089,321	07/29/2002	Norbert Kerner	56/372	2436

7590 10/15/2004
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EXAMINER

BARNES, CRYSTAL J

ART UNIT	PAPER NUMBER
2121	10

DATE MAILED: 10/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/089,321

Applicant(s)

KERNER, NORBERT

Examiner

Crystal J. Barnes

Art Unit

2121

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 May 2004.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 17-39 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☒ Claim(s) 18-30 and 34-39 is/are allowed.
6) ☒ Claim(s) 17,31 and 32 is/are rejected.
7) ☒ Claim(s) 33 is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 11 May 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. The following is a Non-Final Office Action in response to Amendment received on 11 May 2004. Claims 36-39 have been added. Claims 18, 21, 31 and 32 have been amended. Claims 17-39 are now pending in this application.

Drawings

2. The proposed drawing corrections were received on 11 May 2004. These proposed drawing corrections are acceptable.

Specification

3. The corrections to the specification were received on 11 May 2004. These corrections are acceptable.

Claim Objections

4. The corrections to the claims were received on 11 May 2004. These corrections are acceptable.

Response to Arguments

5. Applicant's arguments, see Remarks Item E (pages 12-13), filed 11 May 2004, with respect to obviousness-type double patenting have been fully considered and are persuasive. The non-statutory double patenting rejection of claims 17, 31 and 32 has been withdrawn.

6. Applicant's arguments, see Remarks Item D (page 11-12), filed 11 May 2004, with respect to the rejections of claims 17 and 31-33 under 35 U.S.C. 102(b) as being anticipated by USPN 5,621,656 to Langley have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground of rejection is made in view of USPN 5,282,130 to Molnar.

Claim Rejections - 35 USC § 102

7. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

8. Claims 17, 31 and 32 are rejected under 35 U.S.C. 102(b) as being anticipated by USPN 5,282,130 to Molnar.

As per claim 17, the Molnar reference discloses a method for determining at least one time constant of a reference model, which is designed as a 2nd order time-delay element of a machine, said method comprising: detecting an oscillation frequency (see column 9 lines 65-67, "period of oscillation") of an undamped machine oscillation (see column 10 lines 10-15, "natural period T"); and determining an optimized value (see column 15 lines 20-26, "finding optimal PID values") of a time constant (see column 20 lines 40-44, "find the assumed second-order time constants") of said reference model (see column 12 lines 63-66, "second-order system") as a function of said detected oscillation frequency ("period of oscillation") of said undamped machine oscillation ("natural period T").

As per claim 31, the Molnar reference discloses said method is exercised in an automated manner (see column 1 lines 9-12, "self-tuning or automatic tuning").

As per claim 32, the Molnar reference discloses further comprising using in said machine (see column 4 lines 6-41, "industrial process control loop 8") said reference model (see column 12 lines 63-66, "second-order system") with said optimized value (see column 15 lines 20-26, "finding optimal PID values") of said time constant (see column 20 lines 40-44, "find the assumed second-order time constants").

Allowable Subject Matter

9. Claims 18-30 and 34-39 are allowable.
10. The following is a statement of reasons for the indication of allowable subject matter:

As per claim 18, the prior art of record taken alone or in combination fail to teach a reference model is arranged in a cascaded control arrangement and is located between a position control device with a loop gain and a closed speed control device which comprises a proportional branch and an integral branch and wherein the reference model essentially simulated the behavior of the closed speed control circuit without taking the integral portion into consideration.

As per claim 21, the prior art of record taken alone or in combination fail to teach the optimized value is determined in accordance with the equation $T2_OPT = f(f_{s1}) = 1 / (2 * \pi * f_{s1})$, wherein f_{s1} = oscillation frequency.

As per claim 34, the prior art of record taken alone or in combination fail to teach a closed speed control device, which comprises a proportional branch and an integral branch and wherein the reference model is located between the position control device and the closed speed control device.

11. Claim 33 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The following references are cited to further show the state of the art with respect to optimizing/tuning frequencies using models in general:

USPN 4,095,167 to Weber

USPN 6,591,822 B2 to Dohta

T. Dibble et al., "Frequency Response Characterization of Current Meters", OCEANS, Sept. 1981, Volume 13, Pages 250-256.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Crystal J. Barnes whose telephone number is 703.306.5448 or 571.272.3679 after 14 October 2004. The examiner can normally be reached on Monday-Friday alternate Mondays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anthony Knight can be reached on 703.308.3179 or 571.272.3687 after 14 October 2004. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

CJB
4 October 2004



Anthony Knight
Supervisory Patent Examiner
Group 3600